

**REMARKS**

In the Office Action Summary sheet, the Examiner indicated that the Office Action is non-final. However, in the Office Action text, it was indicated that “[t]his Action was made final.” Via a facsimile communication from the Examiner dated May 23, 2003, the Examiner confirmed that the Action is non-final.

In this Amendment, claims 1, 50, 65, 71, 83 and 89 have been amended to further recite --wherein the heteroaryl as defined for R<sub>3</sub> and R<sub>10</sub> has heteroatoms selected from the group consisting of O, N and S, wherein the hetroaryl may be substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, C<sub>1</sub>-C<sub>6</sub> straight chain or branched alkyl group, and nitro group--. This amendment is supported by the specification at, for example, page 12, 1<sup>st</sup> full paragraph and Examples 56 and 67.

Claim 1 has been amended to replace “AGE breaking” with --preformed AGE breaking--. This amendment is supported by the specification at, for example, page 8, 1<sup>st</sup> paragraph.

Claim 16 has been amended to replace “preventing” with --delaying the onset of--. Claims 19 and 23 have been amended to replace “preventing effects on” with --delaying the onset of--. Claim 24 has been amended to replace “preventing effect in” with --delaying the onset in--. These amendments are supported by the specification at, for example, page 4, lines 4-7.

Claim 71 has been amended to incorporate the subject matter of claim 82 with specific examples for “neurodegenerative disorders” (a) and “cancers” (e). These amendments are supported by the specification at, for example, pages 87 and 90.

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Claims 44 and 86 have been amended to replace “containing of” and “comprising of,” respectively, with --consisting of--.

Claims 42, 43, 62 and 88 have been amended to correct typographical and/or grammatical errors.

Claims 17 and 82 have been cancelled.

No new matter has been added and thus, entry of the present Amendment is respectfully submitted to be proper.

**Interview Summary**

During an in-person interview of Applicant’s representatives and Examiner Binta Robinson, and her supervisor Alan Rotman on June 6, 2003, claims 1-14, 16-29, 31-34, 36-39, 41-44, 46-63, 65-69, 71-75 and 77-90 were discussed. No prior art was discussed. The issues discussed are described in detail later in this Amendment.

**Status of Claims**

During the interview conducted on June 6, 2003, the Examiner agreed that in addition to claims 1, 2, 4, 5, 7, 8, 10, 11, 16-26, 31, 36, 41, 46-50, 53, 54, 57, 59, 60, 65, 66, 71, 72, and 77-90, claims 3, 6, 9, 12-14, 27-30, 32-34, 37-40, 42-44, 52, 55-56, 58, 61-63, 67-69 and 73-75 also read on the elected species.

Applicants respectfully submit that claim 51 also reads on the elected species and should be examined.

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Therefore, claims 1-14, 16-29, 31-34, 36-39, 41-44, 46-63, 65-69, 71-75 and 77-90 are pending, and all of these claims should be examined.

**Drawings**

The Examiner attached to the Office Action a Notice of Draftsperson's Patent Drawing Review, Form PTO-948, objecting to the drawings filed on November 29, 2001.

Replacement drawings are submitted herewith. The Examiner is respectfully requested to acknowledge that the drawings are approved.

**Revision of Restriction Requirement**

On page 2 of the Office Action, the Examiner indicated that the restriction requirement is revised as "[c]laims 1, 2, 4, 5, 7, 8, 10, 11, 16-25, 26, 31, 36, 41, 46-50, 53, 54, 57, 59, 60, 65, 66, 71, 72 and 77-90, drawn to the composition of formula I in claim 1 wherein  $R_1$  is  $N(R_7)N(R_7)R_9$ ,  $R_9$  is H, alkyl,  $SO_2R_{10}$ , and  $R_{10}$  is H and Al,  $R_7$  is everything claimed except heterocyclic moieties,  $R_3$  is thienyl, X is everything claimed except moieties forming heterocyclic rings,  $R_2$  is everything claimed except heterocyclic rings,  $R_{10}$ , Y,  $R_{11}$ ,  $R_{12}$  are as claimed."

Applicants respectfully submit that this definition is improper.

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First, as indicated in the Amendment of January 3, 2003, none of the claims recites that a substituent can be a heterocyclic group. However, the claims do recite that R<sub>2</sub>, R<sub>5</sub>, R<sub>7</sub>, R<sub>9</sub> and R<sub>10</sub> can be heteroaryl groups.

Second, as indicated in the Amendment of January 3, 2003, X is selected from the group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion, BF<sub>4</sub><sup>-</sup> and PF<sub>6</sub><sup>-</sup>. Therefore, X cannot be “moieties forming heterocyclic rings”.

Third, as indicated in the Amendment of January 3, 2003, in the present application, R<sub>1</sub> is only N(R<sub>7</sub>)N(R<sub>7</sub>)R<sub>9</sub>. Therefore, Y, R<sub>11</sub> and R<sub>12</sub> are not present in the structure of formula I.

During the interview on June 3, 2003, the Examiner acknowledged that the use of the term “heterocyclic” was an inadvertent error and that she meant “heteroaryl.” The Examiner also agreed to revise the restriction requirement, so that X is everything claimed, and Y, R<sub>11</sub> and R<sub>12</sub> are deleted.

Further, the language “R<sub>10</sub> is H and Al” is unclear. Specifically, it is unclear what is meant by “Al.” Applicants’ attempts to obtain clarification from the Examiner have been unsuccessful. Instead, the Examiner requested that Applicants reply to the requirement as is. In view of the restrictions on R<sub>2</sub> and R<sub>7</sub>, Applicants believe that it is reasonable to assume that the Examiner’s intention is to limit R<sub>10</sub> to “everything claimed except heteroaryl groups.”

In view of the above, Applicants believe that the genus defined by the Examiner is “the composition of formula I in claim 1 where R<sub>1</sub> is N(R<sub>7</sub>)N(R<sub>7</sub>)R<sub>9</sub>, R<sub>9</sub> is H, alkyl, SO<sub>2</sub>R<sub>10</sub>, and R<sub>10</sub>

everything claimed except heteroaryl moieties, R<sub>7</sub> is everything claimed except heteroaryl moieties, R<sub>3</sub> is thienyl, X is everything claimed, R<sub>2</sub> is everything claimed except heteroaryl rings.”

Applicants respectfully traverse the restriction requirement in that it is unreasonably restrictive. With this revised restriction, if R<sub>10</sub> is defined as H or alkyl, the formula (I) covers only six specific compounds (Compound Nos. 5, 45, 50, 53, 57 and 58) out of ninety-nine compounds disclosed in the specification and listed in Tables 1A and 1B. This places an unfair burden on Applicants who will have to file many further applications. On the other hand, it would not require a lot of work on the part of the Examiner to expand search.

Accordingly, Applicants submit that it is reasonable to define Group I, the elected genus, in the manner as in amended claim 1, which includes all the compounds originally claimed and having the formula I where R<sub>1</sub> is N(R<sub>7</sub>)N(R<sub>7</sub>)R<sub>9</sub>, and R<sub>2</sub>, R<sub>3</sub>, R<sub>7</sub>-R<sub>10</sub> and X are everything claimed, with the proviso that at least one heteroaryl group is present in the formula I.

The Examiner is respectfully requested to reconsider and revise the restriction requirement.

**Rejection Under 35 U.S.C. § 112, First Paragraph**

A. On page 2 of the Office Action, claims 1, 2, 4, 5, 7, 8, 10, 11, 16-26, 31, 36, 41, 46-50, 53, 54, 57, 59, 60, 65, 66, 71, 72 and 77-90 have been rejected for alleged lack of enablement for R<sub>2</sub>, R<sub>7</sub>, R<sub>9</sub> and R<sub>10</sub> as all heteroaryl groups.

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Applicants respectfully traverse the rejection.

Applicants submit that one skilled in the art will be able to make the claimed compounds with R<sub>7</sub>, R<sub>9</sub> and R<sub>10</sub> as any heteroaryl group, based on the present disclosure, without undue experimentation. The same also applies to heteroaryl substituent for R<sub>3</sub>. A detailed explanation had been included in the Amendment of January 3, 2003, from page 60 to page 72, as to how one skilled in the art will be able to introduce heteroaryl substituents at different positions in the presently claimed compounds. The Examiner has not provided any explanation as to why one skilled in the art would not be enabled to do so. Applicants respectfully request that the Examiner provide such an explanation.

Nonetheless, Applicants have, in the Amendment, amended claims 1, 50, 65, 71, 83 and 89 to further define "heteroaryl group," by reciting --wherein the heteroaryl as defined for R<sub>3</sub> and R<sub>10</sub> has heteroatoms selected from the group consisting of O, N and S, wherein the heteroaryl may be substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, C<sub>1</sub>-C<sub>6</sub> straight chain or branched alkyl group, and nitro group--.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

**B.** On page 3 of the Office Action, claims 71 and 82 have been rejected for alleged lack of enablement for "all diseases caused by accumulation of free radicals" as claimed in claim 71, and all diseases claimed in claim 82.

During the interview on June 3, 2003, the Examiner modified the rejection asserting that only "neurodegenerative disorders" (a) and "cancers" (e) as recited in claim 82 are too generic.

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The Examiner further stated that if Applicants incorporate the subject matter of claim 82 into claim 71 and further narrow the scope of “neurodegenerative disorders” and “cancers,” the rejection will be withdrawn.

In response, Applicants have in this Amendment, amended claim 71 to incorporate the subject matter of claim 82 and accordingly, canceled claim 82. Applicants have also amended claim 71 to further define “neurodegenerative disorders” and “cancers.”

Specifically, claim 71 has been amended to recite --neurodegenerative diseases selected from the group consisting of Alzheimer’s disease, Parkinson’s disease, Huntington’s disease, Motor neuron disease and Prion disease-- and --cancer diseases selected from the group consisting of lung cancer, colorectal cancer, cervical cancer, breast cancer and malignant melanoma--.

In view of the above, Applicants respectfully submit that claim 71 as amended is enabled by the specification, and accordingly, the rejection should be withdrawn.

C. On page 3 of the Office Action, claims 16, 17, 19, 23 and 24 have been rejected for alleged lack of enablement for “preventing” various diseases.

During the interview on June 3, 2003, the Examiner suggested substituting “preventing” with the phrase “delaying the onset” or “prolonging the onset”.

In response, Applicants have in this Amendment, amended claims 16, 19, 23 and 24 to replace “preventing” with --delaying the onset--, as suggested by the Examiner. Applicants have also cancelled claim 17.

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Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

**D.** On page 3 of the Office Action, it was asserted that the specification does not enable “inhibiting AGE.”

Applicants respectfully traverse the rejection. Applicants have in the previous Amendment filed on January 3, 2003, amended claims to replace “inhibiting AGE” with --inhibiting AGE formation--.

During the interview on June 3, 2003, the Examiner agreed that the phrase “inhibiting AGE formation” is permissible.

**Rejection Under 35 U.S.C. § 112, Second Paragraph**

On page 5 of the Office Action, claims 1 and 72 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. It was asserted that the phrase “and a pharmaceutically (or cosmetically) acceptable carrier” is missing from the claims.

Applicants respectfully traverse the rejection.

During the interview on June 3, 2003, the Examiner was directed to claims 1 and 71, wherein the language “and a pharmaceutically (or cosmetically) acceptable carrier” is already recited in the claims. Claim 72 depends from claim 71 and therefore, incorporates the recitation



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of "a pharmaceutically (or cosmetically) acceptable carrier." The Examiner agreed that the rejection should be withdrawn.

On page 5 of the Office Action, it was asserted that "the elected species does not read on any of the claims including claim 51.

Applicants respectfully traverse the statement.

During the interview on June 3, 2003, the Examiner agreed that this allegation was a mistake. Accordingly, the statement should be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

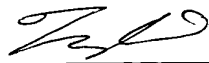
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